Docket No.: 64032/P008US/10307656
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Yi Gong et al.

Application No.: 10/635,367 | Confirmation No.: 1301

Filed: August 6, 2003 | Art Unit: 2617

For: LOCATION POSITIONING IN WIRELESS NETWORKS | Examiner: W. H. Cai

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under 37 C.F.R. § 41.37(a), this brief is filed within two months of the Notice of Appeal filed in this case on October 5, 2006, and is in furtherance of said Notice of Appeal.

The fees required under 37 C.F.R. § 41.20(b)(2) are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

X. Related Proceedings Appendix

Appendix A Claims

Appendix B Evidence

Appendix C Related Proceedings

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

Hong Kong Applied Science and Technology Research Institute Co., Ltd.

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application

There are 104 claims pending in the application.

B. Current Status of Claims

1. Claims canceled: 43, 44, 95, 99, 100, 109
2. Claims withdrawn from consideration but not canceled: none
3. Claims pending: 1-42, 45-94, 96-98 and 101-108
4. Claims allowed: none
5. Claims rejected: 1-42, 45-94, 96-98 and 101-108

C. Claims On Appeal

The claims on appeal are claims 1-42, 45-94, 96-98 and 101-108.

IV. STATUS OF AMENDMENTS

Appellant did not file an Amendment After Final Rejection.

V. SUMMARY OF CLAIMED SUBJECT MATTER

According to claim 1, a system (*e.g.*, 100 of figure 1) comprises a database (*e.g.*, page 10, lines 13-20) containing antenna gain differences between multiple antenna patterns of a wireless network access node (*e.g.*, 101 of figure 1), calculation logic for determining receive signal strength differences of a signal, said signal received using said multiple antenna patterns (*e.g.*, 11, 110, and 111 of figure 1), said signal being transmitted by a device (*e.g.*, 10 of figure 1) disposed within one or more of said multiple antenna patterns, (e.g, page 13, line 16, through page 14, line 10) and comparison logic for comparing said receive signal strength differences to said antenna gain differences and identifying a closest match (*e.g.*, page 14, line 11, through page 15, line 2).

According to claim 38, a system (*e.g.*, 100 of figure 1) comprises a database (*e.g.*, page 10, lines 13-20) containing predicted receive signal strength information for multiple antenna patterns of a wireless network access node (*e.g.*, 101 of figure 1), measurement logic for measuring receive signal strengths of a signal received using said multiple antenna patterns (*e.g.*, 11, 110, and 111 of figure 1), said signal being transmitted by a device (*e.g.*, 10 of figure 1) disposed within one or more of said multiple antenna patterns, (e.g, page 13, line 16, through page 14, line 10) comparison logic for comparing said measured receive signal strengths to said predicted receive signal strength information and identifying a closest match (*e.g.*, page 14, line 11, through page 15, line 2), wherein said database further contains predicted receive signal strength information for multiple antenna patterns (*e.g.*, 13, 130, 131 of figure 1) of a second wireless network access node (103 of figure 1), said measurement logic is further for measuring receive signal strengths of a signal received from said device using said multiple antenna patterns of said second wireless network access node, and said comparison logic is further for comparing said measured receive signal strengths of said second wireless network access node to said predicted receive signal strength information of said second wireless network access node and identifying a closest match, and location estimation logic for determining an estimated location of said device from an intersection

point of arcs projected identified distances from said wireless network access node and said second wireless network access node(*e.g.*, 306 and 308 of figure 3 and page 15, lines 3-5).

According to claim 75, a method (*e.g.*, 300 of figure 3) for providing information useful in determining a position of a device within a wireless network comprises calculating antenna gain differences (*e.g.*, 301 of figure 3 and page 10, line 13, through page 11, line 14) between multiple antenna patterns of a wireless network access node (*e.g.*, 101 of figure 1), determining receive signal strength differences of a signal, said signal received using said multiple antenna patterns (*e.g.*, 11, 110, and 111 of figure 1), said signal being transmitted by a device (*e.g.*, 10 of figure 1) disposed within one or more of said multiple antenna patterns (e.g, 303 of figure 3 and page 13, line 16, through page 14, line 10), and comparing said receive signal strength differences to said antenna gain differences and identifying a closest match (*e.g.*, 305 of figure 3 and page 14, line 11, through page 15, line 2).

According to claim 91, a method (*e.g.*, 400 of figure 4) for providing information useful in determining a position of a device within a wireless network comprises predicting receive signal strength information for multiple antenna patterns of a wireless network access node (*e.g.*, 401 of figure 4 and page 17, lines 4-11), comparing measured receive signal strengths to said predicted receive signal strength information and identifying a closest match (*e.g.*, 402 and 403 of figure 4), calculating antenna gain differences between said multiple antenna patterns of said wireless network access node (*e.g.*, 301 of figure 3 and page 10, line 13, through page 11, line 14), determining receive signal strength differences of a signal received from said device using said multiple antenna patterns (*e.g.*, 303 of figure 3), comparing said receive signal strength differences to said antenna gain differences and identifying a closest match (*e.g.*, 304 of figure 3), estimating a position of said device as a function of said closest match of said antenna gain differences (*e.g.*, 305 of figure 3), and separately estimating a position of said device as a function of said closest match of said receive signal strengths (*e.g.*, 404 of figure 4), wherein a one of said position estimates is used to confirm the other of said position estimates (page 16, lines 14-20).

According to claim 105, a system (*e.g.*, 100 of figure 1) for providing location positioning of a device in a wireless network comprises a channel model independent determination algorithm utilizing receive signal strength differences between multiple

antenna patterns of a wireless network node to determine information with respect to a position of said device (*e.g.*, page 9, line 29, through page 10, line 12), and a channel model based determination algorithm utilizing receive signal strengths of said multiple antenna patterns to determine information with respect to a position of said device (*e.g.*, page 16, line 21 through page 17, line 3).

According to claim 108, a system (*e.g.*, 100 of figure 1) for providing location positioning of a device in a wireless network comprises a channel model independent determination algorithm utilizing receive signal strength differences between multiple receive antenna patterns of a wireless network node and antenna gain differences between said multiple antenna patterns to determine information with respect to a position of said device (*e.g.*, 300 of figure 3 and page 9, line 29, through page 10, line 12).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1, 3, 75, 76, 87, 105, 106, and 108 are rejected under 35 U.S.C. §102(e) over US Patent Application Publication 2004/0203539 (hereinafter, *Benes*).

2. Claims 2 and 86 are rejected under 35 U.S.C. §103(a) over *Benes* in view of US 5,581,260 (hereinafter, *Newman*).

3. Claims 4-9, 27-31, and 88-90 are rejected under 35 U.S.C. §103(a) over *Benes*.

4. Claim 10 is rejected under 35 U.S.C. §103(a) over *Benes* in view of US 6,865,395 (hereinafter, *Riley*).

5. Claims 11-21, 23-26, 32-37, 77-85, and 107 are rejected under 35 U.S.C. §103(a) over *Benes* in view of US 6,148,211 (hereinafter, *Reed*).

6. Claim 22 is rejected under 35 U.S.C. §103(a) over *Benes* in view of *Reed* in further view of *Riley*.

7. Claims 38-42, 45-49, and 59-74 are rejected under 35 U.S.C. §103(a) over *Reed* in view of *Riley*.

8. Claims 50-58 are rejected under 35 U.S.C. §103(a) over *Reed* in view of *Riley* in further view of *Benes*.

9. Claims 91-94 and 102-104 are rejected under 35 U.S.C. §103(a) over *Reed*.

10. Claims 96-98 and 101 are rejected under 35 U.S.C. §103(a) over *Reed* in view of *Benes*.

VII. ARGUMENT

A. First Ground of Rejection

On pages 6-7 of the Final Action, claims 1, 3, 75, 76, 87, 105, 106, and 108 are rejected under 35 U.S.C. §102(e) over *Benes*. Appellant traverses the rejection.

To anticipate a claim under 35 U.S.C. § 102, a reference must teach every element of the claim. *See Verdegaal Bros. Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987). Moreover, in order for an applied reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, "[t]he identical invention must be shown in as complete detail as is contained in the . . . claim." *See Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913 (Fed. Cir. 1989). Furthermore, in order for a reference to be anticipatory under 35 U.S.C. § 102 with respect to a claim, "[t]he elements must be arranged as required by the claim." M.P.E.P. § 2131, *citing In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). As discussed further below, these requirements are not satisfied by the 35 U.S.C. § 102 rejection because *Benes* does not teach every element of the claims.

This rejection, as well as other rejections that are based on *Benes*, rely on a misunderstanding of the operation of the *Benes* system. *Benes* teaches that a communication cell (*e.g.*, 150 of figure 1) includes a plurality of sectors (*e.g.*, 202, 204 of figure 2). *Benes* at [0018]. Each sector in a cell may be associated with one or more antennas. Id. A mobile device (*e.g.*, 160 of figure 1) may determine its angle of arrival from the base station by receiving information from a plurality of the sectors and performing calculations thereon. Id.

at Abstract. In other words, *Benes* teaches two transmit antennas sending two signals to a single mobile device. There is no teaching in *Benes* of, *e.g.*, determining receive signal strength differences of a signal that is received using multiple antenna patterns.

1. Claims 1 and 3

Claim 1 recites, in part, "calculation logic for determining receive signal strength differences of a signal, said signal received using said multiple antenna patterns." *Benes* does not teach at least this feature of claim 1. The Examiner cites the passage at paragraph [0026] to teach the feature; however, such assertion is incorrect because *Benes* does not teach a signal received using multiple antenna patterns, as claimed. Note that paragraphs [0026] and [0027] teach using transmitted downlink signals 802 and 804 to calculate an angle of arrival. The two downlinks signals are received by a mobile station, but it is not taught that either of the signals are received by the mobile station using multiple antenna patterns. Therefore, *Benes* does not teach a signal received using multiple antenna patterns and does not teach this feature of claim 1.

In the Response to Arguments Section of the Final Action, the Examiner states:

> The Examiner respectfully disagrees with the statement above because the Examiner relies on the cited reference for the fact that based on the ERPs, the mobile station 160 may calculate a signal difference (SD) between the peaks of the downlink signals 802, 804 associated with the antennas corresponding to the first and second sectors 202, 204. Clearly, this passage describes a system comprises a calculation logic for determining receive signal strength difference, inherently, a signal received, and using multiple antenna patterns in the first and second sector 202,204.

Final Action at 2. However, the Examiner either misunderstands *Benes* or ignores the wording of the claim. The Examiner's rejection and the reasoning quoted above indicates that the Examiner equates two signals (each transmitted by one of two transmit antennas) that are received by a single base station (as in *Benes*) with a "signal received using multiple antenna patterns," as in claim 1. Therefore, *Benes* does not teach the above-recited feature of claim 1.

Dependent claim 3 depends from independent claim 1 and, thus, inherits all of the limitations of independent claim 1. Thus, the cited art does not teach all claim limitations of

claim 1. It is respectfully submitted that dependent claim 3 is allowable at least because of its dependence from claim 1 for the reasons discussed above. Accordingly, Appellant respectfully requests the reversal of the 35 U.S.C. § 103 rejection of claims 1 and 3.

2. Claims 75, 76, and 87

Claim 75 recites, in part, "determining receive signal strength differences of a signal, said signal received using said multiple antenna patterns." *Benes* does not teach at least this feature of claim 75. As explained above, *Benes* does not teach a signal received using multiple antenna patterns. Note that paragraphs [0026] and [0027] teach using downlink signals 802 and 804 to calculate an angle of arrival. The two downlinks signals are received by a mobile station, but it is not taught that either one of the signals are received by the mobile station using multiple antenna patterns. Thus, *Benes* does not teach this feature of claim 75.

Dependent claims 76 and 87 each depend either directly or indirectly from independent claim 75 and, thus, inherit all of the limitations of independent claim 75. Thus, *Benes* does not teach all claim limitations of claims 76 and 87. It is respectfully submitted that dependent claims 76 and 87 are allowable at least because of their dependence from claim 75 for the reasons discussed above. Accordingly, Appellant respectfully requests the reversal of the 35 U.S.C. § 103 rejection of claims 75, 76, and 87.

3. Claims 105 and 106

Claim 105 recites, in part, "a channel model independent determination algorithm utilizing receive signal strength differences between multiple antenna patterns of a wireless network node to determine information with respect to a position of said device," and "a channel model based determination algorithm utilizing receive signal strengths of said multiple antenna patterns." *Benes* does not teach utilizing receive signal strength differences between multiple antenna patterns, nor does *Benes* teach receive signal strengths of said multiple antenna patterns. Note that paragraphs [0026] and [0027] teach using downlink signals 802 and 804 to calculate an angle of arrival. The two downlinks signals are received by a mobile station, but it is not taught that the mobile station utilizes receive signal strength

differences between multiple antenna patterns. Thus, *Benes* does not teach these features of claim 105.

Dependent claim 106 depends from independent claim 105 and, thus, inherits all of the limitations of independent claim 105. Thus, the cited art does not teach all claim limitations of claim 106. It is respectfully submitted that dependent claim 106 is allowable at least because of its dependence from claim 105 for the reasons discussed above. Accordingly, Appellant respectfully requests the reversal of the 35 U.S.C. § 103 rejection of claims 105 and 106.

4. Claim 108

Claim 108 recites, in part, "a channel model independent determination algorithm utilizing receive signal strength differences between multiple receive antenna patterns." *Benes* does not teach utilizing multiple receive antenna patterns. Note that paragraphs [0026] and [0027] teach using downlink signals 802 and 804 to calculate an angle of arrival. The two downlinks signals are received by a mobile station, but it is not taught that the mobile station utilizes multiple receive antenna patterns. Thus, *Benes* does not teach this feature of claim 108.

B. Second Ground of Rejection

On pages 7-8 of the Final Action, claims 2 and 86 are rejected under 35 U.S.C. §103(a) over *Benes* in view of *Newman*. Appellant traverses the rejection.

Claims 2 and 86 are rejected under 35 U.S.C. §103(a) over *Benes* in view of *Newman*. Appellant traverses the rejection.

To show obviousness under 35 U.S.C. § 103(a), three basic criteria must be met. First, there must be some suggestion or motivation, either in the reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the applied reference. *See In re Vaeck* 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. *In re Merck and Co., Inc.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Finally, the applied reference must teach or suggest all the claim limitations. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). Without conceding

any criteria, Appellant respectfully asserts that the rejection does not satisfy the first and third criteria, as discussed further below.

1. Lack of motivation to combine

The Final Action fails to provide the requisite motivation to modify *Benes* with *Newman*. It is well settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness. On page 8 of the Final Action the Examiner states:

> Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention was made to use multiple narrow antenna patterns and a wide antenna pattern to compute or determine antenna gain differences because in order to compute the antenna gain differences, it would require at least two different antenna patterns to take into considerations, and that is a multiple narrow beam, and a wide beam. It is also obvious to one skilled in the art that the antenna gain differences could be stored on any computer-readable medium such as non-volatile memory, or a database.

In other words, the rejection states that it is obvious to modify *Benes* to calculate a gain difference between a wide pattern and a narrow pattern because calculating differences requires at least two patterns. However, the rejection fails to assert why one of ordinary skill in the art would be motivated to modify *Benes* to calculate gain differences specifically using a wide pattern and a narrow pattern.

Further, the cited portion *Newman* (column 1, line 54, through column 2, line 7) does not suggest the desirability for the modification—it merely describes problems in producing full sector coverage. Such language is merely a statement that the references can be modified, and does not state any desirability for making the modifications. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combinations. *In re Mills*, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). Thus, the failure to provide motivation suggesting desirability of the modifications is improper. Accordingly, Appellant respectfully submits that the 35 U.S.C. § 103(a) rejection of claims 2 and 86 fails.

2. Failure to teach or suggest all claimed limitations

Claims 2 and 86 depend from claims 1 and 75, respectively. As shown above, claims 1 and 75 are patentable over the rejections of record. Nothing in the rejections of claims 2 and 86 cures the deficiency in the rejections of the respective base claims. Accordingly, it is respectfully submitted that claims 2 and 86 are patentable at least because of their dependence from claims 1 and 75.

C. Third Ground of Rejection

On pages 9-10 of the Final Action, claims 4-9, 27-31, and 88-90 are rejected under 35 U.S.C. §103(a) over *Benes*. Appellant traverses the rejection.

1. Claims 4-8

Dependent claims 4-8 each depend either directly or indirectly from independent claim 1 and, thus, inherit all of the limitations of independent claim 1. Thus, *Benes* does not teach or suggest all claim limitations of claims 4-8. It is respectfully submitted that dependent claims 4-8 are allowable at least because of their dependence from claim 1 for the reasons discussed above. Accordingly, Appellant respectfully requests the reversal of the 35 U.S.C. § 103 rejection of claims 4-8.

2. Claim 9

a. Lack of motivation to modify

In rejecting claim 9, the Examiner fails to provide the requisite motivation to modify *Benes* as proposed. The Examiner admits that *Benes* does not teach or suggest applying a method to a second wireless access node. Final Action at 10. The Examiner then asserts that it would be obvious to apply steps of claim 1 to a second wireless access node. Id. However, the Examiner does not explain why one of ordinary skill in the art would be motivated to modify *Benes* in such a way. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combinations. *Mills*, 16 U.S.P.Q.2d 1430. Thus, the failure to provide motivation suggesting desirability of the modifications is improper. Accordingly, Appellant respectfully submits that the 35 U.S.C. § 103(a) rejection of claims 4-8 fails.

b. Failure to teach or suggest all claimed limitations

The Examiner admits that *Benes* does not teach or suggest applying a method to a second wireless access node. Final Action at 10. The Examiner then asserts that it would be obvious to apply steps of claim 1 to a second wireless access node. Id. However, no cited reference teaches the features of claim 9. Accordingly, Appellant respectfully requests the reversal of the 35 U.S.C. § 103 rejection of claim 9.

3. Claims 27, 28, 30, 31, 88, and 90

In rejecting claims 27-31 and 88-90, the Examiner fails to provide the requisite motivation to modify *Benes* as proposed. It is well settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness. On page 10 of the Final Action the Examiner states:

> However, it is obvious to one skilled in the art that once a location of the device is identified or determined, then one skilled in the art would be able to utilize the location information to beam or deliver information, advertisement to the particular device or user. Furthermore, based on the location determination, then one skilled in the art would be able to have a control over it. Hence, a security logic, location-based access security logic for providing levels of access to wireless, content delivery logic for providing content, or management logic for providing management are solely a design decision; and therefore, it is obvious to one skilled in the art, and it is not novel.

In other words, the Examiner tries to avoid specifying any motivation by asserting that the features recited by claims 27-31 and 88-90 are mere design choices. However, such features are not properly dismissed. Where a claimed structure and the function it performs are different from the prior art, it is improper to find that such features are a design choice. *In re Chu*, 36 U.S.P.Q.2d 1089, 1095 (Fed. Cir. 1995), *citing In re Gal*, 980 F.2d 717, 25 U.S.P.Q.2d 1076 (Fed. Cir. 1992). In this case, each of claims 27-31 and 88-90 recite a function, such as, for example, providing network access, data content, management of network resources, preventing access, providing levels of access, etc. Claims 27-31 additionally recite structures. Such structures and functions are not taught or suggested in *Benes*, and further, *Benes* makes no suggestion why one would be motivated to modify its described system as proposed. Accordingly, the recited features are not mere design choices, and the Examiner provides no other motivation. The mere fact that references can be

combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combinations. *Mills*, 16 U.S.P.Q.2d 1430. Thus, the failure to provide motivation suggesting desirability of the modifications is improper.

In the Response to Arguments section of the Final Action, the Examiner provides two references (US 7,020,476 and United States Patent Application Publication 2003/0104819) in order to show that the features of claims 27-31 and 88-90 are known in the art. Final Action at 5. However, this is does not provide the requisite motivation to modify *Benes*, nor does it show that the recited features of claims 27-31 and 88-90 are properly dismissed as design choices because it fails to demonstrate that the claimed structures and the functions performed are the same as in the prior art. Accordingly, Appellant respectfully submits that the 35 U.S.C. § 103(a) rejection of claims 27-31 and 88-90 fails.

a. Failure to teach or suggest all limitations

Claims 27, 28, 30, 31, 88, and 90 depend from claims 1 and 75, respectively. As shown above, claims 1 and 75 are patentable over the rejections of record. Nothing in the rejections of claims 27, 28, 30, 31, 88, and 90 cures the deficiency in the rejections of the respective base claims. Accordingly, it is respectfully submitted that claims 27, 28, 30, 31, 88, and 90 are patentable at least because of their dependence from claims 1 and 75.

4. Claims 29 and 89

a. Lack of motivation to modify

The same reasoning used to reject claims 27, 28, 30, 31, 88, and 90 is used to reject claims 29 and 89. Thus, for the convenience of the Board, Appellant does not repeat the argument made above, but rather requests that the Board consider the lack of motivation, since it applies to claims 29 and 89 as well.

Furthermore, as argued above, where a claimed structure and the function it performs are different from the prior art, it is improper to find that such features are a design choice. *Chu*, 36 U.S.P.Q.2d at 1095. In this case, each of claims 29 and 89 recite a function. Claim 29 additionally recites structures. Such structures and functions are not taught or suggested in *Benes*.

In the Response to Arguments section of the Final Action, the Examiner provides two references (US 7,020,476 and United States Patent Application Publication 2003/0104819) in order to show that the features of claims 29 and 89 are known in the art. Final Action at 5. However, this is does not provide the requisite motivation to modify *Benes*, nor does it show that the recited features of claims 29 and 89 are properly dismissed as design choices because it fails to demonstrate that the claimed structures and the functions performed are the same as in the prior art. Accordingly, Appellant respectfully submits that the 35 U.S.C. § 103(a) rejection of claims 29 and 89 fails.

b. Failure to teach or suggest all claimed limitations

Claims 29 and 89 depend from claims 1 and 75, respectively. As shown above, claims 1 and 75 are patentable over the rejections of record. Nothing in the rejections of claims 29 and 89 cures the deficiency in the rejections of the respective base claims. Accordingly, it is respectfully submitted that claims 29 and 89 are patentable at least because of their dependence from claims 1 and 75.

Further, claims 29 and 89 include features that are novel in their own right because they are not taught or suggested by *Benes*, as modified. In rejecting each of claims 27-31 and 88-90, it appears that the Examiner asserts that each of the features is well-known in the art by dismissing such features as design choices. It is believed that such statement is Official Notice by the Office that the features of the claims are known. Such an assertion without documentary evidence may be appropriate if the Examiner provides specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge. *E.g.*, *In re Soli*, 317 F.2d 941, 945-46, 137 USPQ 797 800 (CCPA 1963). However, the rejections do not include such reasoning, as explained below.

For instance, in rejecting claims 27-31 and 88-90, the Final Action states, "once a location of the device is identified or determined, then one skilled in the art would be able to utilize the location information to beam or deliver information, advertisement to the particular device or user." Final Action at 10. However, such statement tries to paraphrase claimed features and simply assert obviousness without providing any reasoning. Further, the rejection states, "based on the location determination, then one skilled in the art would be able to have a control over it." Id. However, there is no reasoning provided that explains

what kind of control is had over the device or how or why such control is possible. Then, the rejection simply asserts that security logic, content delivery logic, and management logic are obvious. Id. Once again, however, there is no technical reasoning. Since the requisite sound technical and scientific reasoning is not provided, such Official Notice is improper.

In the Response to Arguments section of the Final Action, the Examiner states:

> Firstly, the 'closest match' is used and considered to be the identified location. Furthermore, the claims recite that security logic, location-based access security logic, content delivery logic, management logic, or asset tracking logic is the function of the identified closest match, which means that based on the location identified, then the system would deliver a particular content, or prevent or limit to certain accessibility to a particular subscriber, or tracking the device based on the identified location. Since the system has ability to provide a secured network, content delivery, etc.; therefore, it is also obvious that the management logic (i.e., the system) provides management to the wireless communications and wireless communication system resources.

Final Action at 4. However, that is simply a statement that the features of claims 27-31 and 88-90 flow from "identifying a closest match." Once again, however, there is no technical reasoning, as it is merely a long extrapolation. Since the requisite sound technical and scientific reasoning is not provided, such Official Notice is improper.

The Examiner also provides two references to support the assertions (US 7,020,476, hereinafter, *Day*, and United States Patent Application Publication 2003/0104819, hereinafter, *Knauerhase*). It does not appear that the Examiner relies on *Day* to show the features of claims 29 and 89, nor does it appear that *Day* discloses the features of 29 and 89. Rather, the Examiner uses *Knauerhase* to show that the features of claims 29 and 89 are well known. The Examiner states that the automatic updating of presence information in *Knauerhase* discloses "content delivery logic for providing content via a wireless network to said device as a function of said identified closest match," as recited by claim 29 and "providing data content as a function of said closest match," as recited by claim 89. However, *Knauerhase* teaches that the presence information on mobile devices is updated based upon presence rules, not as a function of a closest match. *See Knauerhase* at paragraph [0061]. Thus, the recited features of claims 29 and 89 are not disclosed by *Knauerhase*, are not well-known, and are not properly dismissed as design choices. Accordingly, withdrawal of the rejection of claims 29 and 89 is respectfully requested.

D. Fourth Ground of Rejection

On page 11 of the Final Action, claim 10 is rejected under 35 U.S.C. §103(a) over *Benes* in view of *Riley*. Appellant traverses the rejection.

1. Failure to teach or suggest all claim limitations

Claim 10 depends from claim 1. As shown above, claim 1 is patentable over the rejections of record. Nothing in the rejection of claim 10 cures the deficiency in the rejection of claim 1. Accordingly, it is respectfully submitted that claim 10 is patentable at least because of its dependence from claim 1.

2. Lack of motivation to modify

The Examiner fails to provide the requisite motivation to combine *Benes* with *Riley*. It is well settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness. On page 11 of the Final Action, the Examiner states:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a method of estimating location of a device from an intersection point of vector projected from the wireless network access node because this is one of the desirable methods in determining the location.

In other words, the Examiner states that the feature is desirable because "it is one of the desirable methods." The statement is circular in nature (*i.e.*, "it is desirable because it is desirable") and fails to explain why one of ordinary skill in the art would be motivated to make such a modification. Such language is merely a statement that the references can be modified, and does not state any real desirability for making the modifications. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combinations. *Mills*, 16 U.S.P.Q.2d 1430. Thus, the failure to provide motivation suggesting desirability of the modifications is improper. Accordingly, Appellant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 10 be reversed.

E. Fifth Ground of Rejection

On pages 11-18 of the Final Action, Claims 11-21, 23-26, 32-37, 77-85, and 107 are rejected under 35 U.S.C. §103(a) over *Benes* in view of *Reed*. Appellant traverses the rejection.

1. Claims 11-20, 24-26, 32-37, 77-83, 85, and 107

Claims 11-20, 23-26, 32-37, 77-83, 85, and 107 depend from claims 1, 75, and 105, respectively. As shown above, claims 1, 75, and 105 are patentable over the rejections of record. Nothing in the rejections of claims 11-20, 23-26, 32-37, 77-83, 85, and 107 cures the deficiency in the rejections of the respective base claims. Accordingly, it is respectfully submitted that claims 11-20, 23-26, 32-37, 77-83, 85, and 107 are patentable at least because of their dependence from claims 1, 75, and 105.

2. Claim 21

In addition to being patentable because of its dependence from claim 1, claim 21 includes limitations that are patentable in their own right. Claim 21 recites, in part, "location estimation logic for determining an estimated location of said device from an intersection point of arcs projected identified distances from said wireless network access node and said second wireless network access node." The combination does not teach or suggest the above-recited feature of claim 21 because neither reference teaches determining an estimated location from intersection point of arcs. The Examiner does not assert that *Reed* teaches or suggests the feature and, instead, relies on *Benes* to teach or suggest the feature. Final Action at 14-15. *Benes* does not teach or suggest the above-recited feature. The Examiner cites figure 2 and the description thereof to show the feature. Id. Figure 2 and the description thereof teaches sectorized cells and a wireless terminal. *See Benes* at paragraph [0018]. The passage does not mention estimating a location of a device, much less estimating a location of a device from intersection points of arcs. Thus, the passage does not teach or suggest "location estimation logic for determining an estimated location of said device from an intersection point of arcs projected identified distances from said wireless network access node and said second wireless network access node," as recited by claim 21.

3. Claim 84

In addition to being patentable because of its dependence from claim 75, claim 84 includes limitations that are patentable in their own right. Claim 84 recites, in part, "a one of said position estimates is used to confirm the other of said position estimates." The combination does not teach or suggest the above-recited feature of claim 84 because neither reference teaches determining an estimated location from intersection point of arcs. The Examiner does not assert that *Benes* teaches or suggests the feature and, instead, relies on *Reed* to teach or suggest the feature. Final Action at 17. *Reed* does not teach or suggest the above-recited feature. The Examiner cites column 1, lines 1-21 of *Reed* to show the feature. Id. The passage mentions that it may be desirable to locate users who are making calls, but it does not mention more than one position estimate, much less using one position estimate to confirm another. Thus, the passage does not teach or suggest "a one of said position estimates is used to confirm the other of said position estimates," as recited by claim 84.

F. Sixth Ground of Rejection

On pages 18-19 of the Final Action, Claim 22 is rejected under 35 U.S.C. §103(a) over *Benes* in view of *Reed* in further view of *Riley*. Appellant traverses the rejection.

Claim 22 depends from claim 1. As shown above, claim 1 is patentable over the rejections of record. Nothing in the rejection of claim 22 cures the deficiency in the rejection of claim 1. Accordingly, it is respectfully submitted that claim 22 is patentable at least because of its dependence from claim 1.

G. Seventh Ground of Rejection

On pages 19-24 of the Final Action, claims 38-42, 45-49, and 59-74 are rejected under 35 U.S.C. §103(a) over *Reed* in view of *Riley*. Appellant traverses the rejection.

1. Claims 38-42, 46-49, 59-63, and 69-74

a. Lack of motivation to modify

Further, the combination of *Reed* and *Riley* is without proper motivation. The Examiner fails to provide the requisite motivation to combine *Reed* with *Riley*. It is well

settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness. On page 22 of the Final Action the Examiner states:

> It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a method of estimating location of a device from an intersection point of vector projected from the wireless network access node because this is one of the desirable methods in determining the location.

In other words, the rejection states that the feature is desirable because it is desirable. The statement is circular and fails to explain why one of ordinary skill in the art would be motivated to modify the system of *Reed* with features from *Riley*. Such language is merely a statement that the references can be modified, and does not state any desirability for making the modifications. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combinations. *Mills*, 16 U.S.P.Q.2d 1430. Thus, the failure to provide motivation suggesting desirability of the modifications is improper.

b. Failure to teach or suggest all claim limitations

Claim 38 recites, in part, "location estimation logic for determining an estimated location of said device from an intersection point of arcs projected identified distances from said wireless network access node and said second wireless network access node." The combination does not teach or suggest the above-recited feature of claim 38 because neither reference teaches determining an estimated location from intersection point of arcs. The Examiner admits that *Reed* does not teach or suggest the feature and, instead, relies on *Riley* to teach or suggest the feature. Final Action at 20-21. *Riley* does not teach or suggest the above-recited feature. The Examiner cites figure 2 and the description thereof to show the feature. Final Action at 21. Figure 2 and the description thereof teaches sectorized cells and a wireless terminal. *See Riley* at Col. 4, line 40 through Col. 5, line 31. The passage mentions estimating a wireless terminal's position; however, it does not teach such estimating is performed from an intersection of arcs. Thus, the passage does not teach or suggest "location estimation logic for determining an estimated location of said device from an intersection point of arcs projected identified distances from said wireless network access node and said second wireless network access node," as recited by claim 38.

In the Response to Arguments section of the Final Action, the Examiner again points to figure 2 of *Riley* and items 105a-d therein. Final Action at 3. However, *Riley* teaches the use of centers of intersecting circles to estimate position. This is illustrated well in figure 4 of *Riley*, which shows a "combined expected area center" 412, which appears to be a circle center. No mention is made of intersecting arcs. Accordingly, the cited combination does not teach the above-quoted feature of claim 38.

Dependent claims 39-42, 46-49, 59-63, and 69-74 each depend either directly or indirectly from independent claim 38 and, thus, inherit all of the limitations of independent claim 38. Thus, the combination of *Reed* and *Riley* does not teach or suggest all claim limitations of claims 39-42, 46-49, 59-63, and 69-74. It is respectfully submitted that dependent claims 39-42, 46-49, 59-63, and 69-74 are allowable at least because of their dependence from claim 38 for the reasons discussed above. Accordingly, Appellant respectfully requests the withdrawal of the 35 U.S.C. § 103 rejection of claims 38-42, 46-49, 59-63, and 69-74.

2. Claim 45

a. Lack of motivation to modify

For the convenience of the Board, Appellant does not repeat the argument made above with regard to independent claim 38, but rather requests that the Board consider the lack of motivation, since it applies to claim 45 as well.

b. Failure to teach or suggest all claim limitations

Claim 45 recites, in part, "location estimation logic for determining an estimated location of said device from a midpoint of positions associated with said closest matches from said wireless network access node and said second wireless network access node." The combination does not teach or suggest the above-recited feature of claim 45 because neither reference teaches determining an estimated location from a midpoint of positions. The Examiner does not rely on *Reed* to teach or suggest the feature, nor does it teach or suggest the feature. *See* Final Action at 22. Instead, the Examiner cites *Riley* at column 6, lines 58-67 to show the feature. Id. The cited passage from *Riley* teaches expected coverage areas of a base transceiver station. The cited passage does not mention or even suggest determining

an estimated location from a midpoint of positions. Thus, the passage does not teach or suggest "location estimation logic for determining an estimated location of said device from a midpoint of positions associated with said closest matches from said wireless network access node and said second wireless network access node," as recited by claim 45. Accordingly, the cited combination does not teach the above-quoted feature of claim 45. Therefore, Appellant respectfully requests the reversal of the rejection of claim 45.

3. Claims 64, 65, 67, and 68

a. Lack of motivation to modify

For the convenience of the Board, Appellant does not repeat the argument made above with regard to independent claim 38, but rather requests that the Board consider the lack of motivation, since it applies to claims 64, 65, 67, and 68 as well. In addition to a lack of motivation to combine *Reed* and *Riley*, the rejection of claims 64, 65, 67, and 68 suffers another lack of motivation to modify, as explained below.

In rejecting claims 64, 65, 67, and 68, the Examiner fails to provide the requisite motivation to modify *Reed* and *Riley* as proposed. It is well settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness. On page 23 of the Final Action the Examiner states:

> However, it is obvious to one skilled in the art that once a location of the device is identified or determined, then one skilled in the art would be able to utilize the location information to beam or deliver information, advertisement to the particular device or user. Furthermore, based on the location determination, then one skilled in the art would be able to have a control over it. Hence, a security logic, location-based access security logic for providing levels of access to wireless, content delivery logic for providing content, or management logic for providing management are solely a design decision; and therefore, it is obvious to one skilled in the art, and it is not novel.

In other words, the Examiner tries to avoid specifying any motivation by asserting that the features recited by claims 64, 65, 67, and 68 are mere design choices. However, such features are not properly dismissed. Where a claimed structure and the function it performs are different from the prior art, it is improper to find that such features are a design choice. *Chu*, 36 U.S.P.Q.2d at 1095. In this case, each of claims 64, 65, 67, and 68 recite structures

with functions. Such structures and functions are not taught or suggested in the combination of *Reed* and *Riley*, and further, the combination of *Reed* and *Riley* makes no suggestion why one would be motivated to modify it as proposed. Accordingly, the recited features are not mere design choices, and the Examiner provides no other motivation. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combinations. *Mills*, 16 U.S.P.Q.2d 1430. Thus, the failure to provide motivation suggesting desirability of the modifications is improper.

In the Response to Arguments section of the Final Action, the Examiner provides two references (US 7,020,476 and United States Patent Application Publication 2003/0104819) in order to show that the features of claims 64, 65, 67, and 68 are known in the art. Final Action at 5. However, this is does not provide the requisite motivation to modify the combination of *Reed* and *Riley*, nor does it show that the recited features of claims 64, 65, 67, and 68 are properly dismissed as design choices because it fails to demonstrate that the claimed structures and the functions performed are the same as in the prior art. Accordingly, Appellant respectfully submits that the 35 U.S.C. § 103(a) rejection of claims 64, 65, 67, and 68 fails.

b. Failure to teach or suggest all limitations

Claims 64, 65, 67, and 68 depend from claim 38. As shown above, claim 38 is patentable over the rejections of record. Nothing in the rejections of claims 64, 65, 67, and 68 cures the deficiency in the rejections of claim 38. Accordingly, it is respectfully submitted that claims 64, 65, 67, and 68 are patentable at least because of their dependence from claim 38.

4. Claim 66

a. Lack of motivation to modify

For the convenience of the Board, Appellant does not repeat the argument made above with regard to independent claim 38, but rather requests that the Board consider the lack of motivation, since it applies to claim 66 as well. In addition to a lack of motivation to

combine *Reed* and *Riley*, the rejection of claim 66 suffers another lack of motivation to modify, as explained below.

As argued above, where a claimed structure and the function it performs are different from the prior art, it is improper to find that such features are a design choice. *Chu*, 36 U.S.P.Q.2d at 1095. In this case, claim 66 recites a structure and a function. Such structure and function are not taught or suggested in the combination of *Reed* and *Riley*.

In the Response to Arguments section of the Final Action, the Examiner provides two references (US 7,020,476 and United States Patent Application Publication 2003/0104819) in order to show that the features of claim 66 are known in the art. Final Action at 5. However, this is does not provide the requisite motivation to modify the combination of *Reed* and *Riley*, nor does it show that the recited features of claim 66 are properly dismissed as design choices because it fails to demonstrate that the claimed structures and the functions performed are the same as in *Reed* and *Riley*. Accordingly, Appellant respectfully submits that the 35 U.S.C. § 103(a) rejection of claim 66 fails.

b. Failure to teach or suggest all claimed limitations

Claim 66 depends from claim 38. As shown above, claim 38 is patentable over the rejections of record. Nothing in the rejection of claim 66 cures the deficiency in the rejection of claim 38. Accordingly, it is respectfully submitted that claim 66 is patentable at least because of its dependence from claim 38.

Further, claim 66 include features that are novel in their own right because they are not taught or suggested by the combination of *Reed* and *Riley*. In rejecting each of claims 64-68, it appears that the Examiner asserts that each of the features is well-known in the art by dismissing such features as design choices. It is believed that such statement is Official Notice by the Office that the features of the claims are known. Such an assertion without documentary evidence may be appropriate if the Examiner provides specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge. *E.g.*, *Soli*, 317 F.2d at 945-46. However, the rejections do not include such reasoning, as explained below.

For instance, in rejecting claims 64-68, the Final Action states, "once a location of the device is identified or determined, then one skilled in the art would be able to utilize the location information to beam or deliver information, advertisement to the particular device or user." Final Action at 23. However, such statement tries to paraphrase claimed features and simply assert obviousness without providing any reasoning. Further, the rejection states, "based on the location determination, then one skilled in the art would be able to have a control over it." Id. However, there is no reasoning provided that explains what kind of control is had over the device or how or why such control is possible. Then, the rejection simply asserts that security logic, content delivery logic, and management logic are obvious. Id. Once again, however, there is no technical reasoning. Since the requisite sound technical and scientific reasoning is not provided, such Official Notice is improper.

In the Response to Arguments section of the Final Action, the Examiner states:

> Firstly, the 'closest match' is used and considered to be the identified location. Furthermore, the claims recite that security logic, location-based access security logic, content delivery logic, management logic, or asset tracking logic is the function of the identified closest match, which means that based on the location identified, then the system would deliver a particular content, or prevent or limit to certain accessibility to a particular subscriber, or tracking the device based on the identified location. Since the system has ability to provide a secured network, content delivery, etc.; therefore, it is also obvious that the management logic (i.e., the system) provides management to the wireless communications and wireless communication system resources.

Final Action at 4. However, that is simply a statement that the features of claims 64-68 flow from "identifying a closest match." Once again, however, there is no technical reasoning, as it is merely a long extrapolation. Since the requisite sound technical and scientific reasoning is not provided, such Official Notice is improper.

The Examiner also provides two references to support the assertions (US 7,020,476, hereinafter, *Day*, and United States Patent Application Publication 2003/0104819, hereinafter, *Knauerhase*). It does not appear that the Examiner relies on *Day* to show the features of claim 66, nor does it appear that *Day* discloses the features of claim 66. Rather, the Examiner uses *Knauerhase* to show that the features of claim 66 are well known. The Examiner states that the automatic updating of presence information in *Knauerhase* discloses "content delivery logic for providing content via a wireless network to said device as a

function of said identified closest match," as recited by claim 66. However, *Knauerhase* teaches that the presence information on mobile devices is updated based upon presence rules, not as a function of a closest match. *See Knauerhase* at paragraph [0061]. Thus, the recited features of claim 66 are not disclosed by *Knauerhase*, are not well-known, and are not properly dismissed as design choices. Accordingly, withdrawal of the rejection of claim 66 is respectfully requested.

H. Eighth Ground of Rejection

On pages 24-27, claims 50-58 are rejected under 35 U.S.C. §103(a) over *Reed* in view of *Riley* in further view of *Benes*. Appellant traverses the rejection.

As shown above, *Reed* in view of *Riley* does not teach or suggest all limitations of claim 38. Dependent claims 50-58 each depend either directly or indirectly from independent claim 38 and, thus, inherit all of the limitations of independent claim 38. Thus, the combination of *Reed* in view of *Riley* does not teach or suggest all claim limitations of claims 50-58. The Examiner does not rely on *Benes* to supply the missing features in the rejection of claim 38, nor does *Benes* supply the missing features. It is respectfully submitted that dependent claims 50-58 are allowable at least because of their dependence from claim 38 for the reasons discussed above. Accordingly, Appellant respectfully requests the withdrawal of the 35 U.S.C. § 103 rejection of claims 50-58.

I. Ninth Ground of Rejection

On pages 27-29 of the Final Action, claims 91-94 and 102-104 are rejected under 35 U.S.C. §103(a) over *Reed*. Appellant traverses the rejection.

1. Claims 91-94

Claim 91 recites in part, "wherein a one of said position estimates is used to confirm the other of said position estimates." *Benes* does not teach or suggest this feature of claim 91, and the Examiner admits this deficiency in the rejection. *See* Final Action at 28. However, the Examiner insists that claim 91 is obvious because of a passage in the M.P.E.P. that supposedly asserts that "claim scope is not limited by claim language that suggests or makes optional but does not require steps to be performed, or by claim language that does not limit a

claim to a particular structure." Id. The above-recited feature should be given patentable weight, the Examiner's assertion notwithstanding, for at least two reasons. First, the above-recited feature of claim 91 does not recite an optional step or operation, and it is unclear why the rejection raises this issue—it is simply unsupportable. Second, claim 91 is a method claim, and Appellant knows of no law or rule that requires a method to be limited to a particular structure. Thus, the Examiner's assertion is an incorrect statement of law. According, the above-recited feature must be given patentable weight. Accordingly, *Reed* does not teach the above-quoted feature of claim 91.

Dependent claims 92-94 each depend either directly or indirectly from independent claim 91 and, thus, inherit all of the limitations of independent claim 91. Thus, the cited art does not teach or suggest all claim limitations of claims 92-94. It is respectfully submitted that dependent claims 92-94 are allowable at least because of their dependence from claim 91 for the reasons discussed above. Accordingly, Appellant respectfully requests the withdrawal of the 35 U.S.C. § 103 rejection of claims 91-94.

2. Claims 102 and 104

a. Lack of motivation to modify

In rejecting claims 102-104, the Examiner fails to provide the requisite motivation to modify *Reed* as proposed. It is well settled that the fact that references can be combined or modified is not sufficient to establish a *prima facie* case of obviousness. On pages 28-29 of the Final Action the Examiner states:

> However, it is obvious to one skilled in the art that once a location of the device is identified or determined, then one skilled in the art would be able to utilize the location information to beam or deliver information, advertisement to the particular device or user. Furthermore, based on the location determination, then one skilled in the art would be able to have a control over it. Hence, a security logic, location-based access security logic for providing levels of access to wireless, content delivery logic for providing content, or management logic for providing management are solely a design decision; and therefore, it is obvious to one skilled in the art, and it is not novel.

In other words, it appears that the Examiner tries to avoid specifying any motivation by asserting that the features recited by claims 102-104 are mere design choices. However, such

features are not properly dismissed. Where a claimed structure and the function it performs are different from the prior art, it is improper to find that such features are a design choice. *Chu*, 36 U.S.P.Q.2d at 1095. In this case, each of claims 102-104 recites a function. Such functions are not taught or suggested in *Reed*, and further, the cited art makes no suggestion why one would be motivated to modify *Reed* as proposed. Accordingly, the recited features are not mere design choices, and the rejection provides no other motivation. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combinations. *Mills*, 16 U.S.P.Q.2d 1430. Thus, the failure to provide motivation suggesting desirability of the modifications is improper.

In the Response to Arguments section of the Final Action, the Examiner provides two references (US 7,020,476 and United States Patent Application Publication 2003/0104819) in order to show that the features of claims 102-104 are known in the art. Final Action at 5. However, this is does not provide the requisite motivation to modify *Reed*, nor does it show that the recited features of claims 102-104 are properly dismissed as design choices because it fails to demonstrate that the claimed structures and the functions performed are the same as in *Reed*. Accordingly, Appellant respectfully submits that the 35 U.S.C. § 103(a) rejection of claims 102-104 fails.

b. Failure to teach or suggest all claim limitations

Claims 102 and 104 depend from claim 91. As shown above, claim 91 is patentable over the rejections of record. Nothing in the rejections of 102 and 104 cures the deficiency in the rejections of claim 91. Accordingly, it is respectfully submitted that claims 102 and 104 are patentable at least because of their dependence from claim 91.

3. Claim 103

The same reasoning used to reject claims 102 and 104 is used to reject claim 103. Thus, for the convenience of the Board, Appellant does not repeat the argument made above, but rather requests that the Board consider the lack of motivation, since it applies to claim 102 as well.

Furthermore, as argued above, where a claimed structure and the function it performs are different from the prior art, it is improper to find that such features are a design choice. *Chu*, 36 U.S.P.Q.2d at 1095. In this case, claim 103 recites a function. Such function is not taught or suggested in *Reed*.

In the Response to Arguments section of the Final Action, the Examiner provides two references (US 7,020,476 and United States Patent Application Publication 2003/0104819) in order to show that the features of claim 103 is known in the art. Final Action at 5. However, this is does not provide the requisite motivation to modify *Reed*, nor does it show that the recited features of claim 103 is properly dismissed as a design choice because it fails to demonstrate that the claimed structures and the functions performed are the same as in *Reed*. Accordingly, Appellant respectfully submits that the 35 U.S.C. § 103(a) rejection of claim 103 fails.

a. Failure to teach or suggest all claimed limitations

Claim 103 depends from claim 91. As shown above, claim 91 is patentable over the rejections of record. Nothing in the rejection of claim 103 cures the deficiency in the rejections of claim 91. Accordingly, it is respectfully submitted that claim 103 is patentable at least because of its dependence from claim 91.

Further, claim 103 includes features that are novel in their own right because they are not taught or suggested by *Reed*, as modified. In rejecting each of claims 102-104, it appears that the Examiner asserts that each of the features is well-known in the art by dismissing such features as design choices. *See* Final Action at 28-29. It is believed that such statement is Official Notice by the Office that the features of the claims are known. Such an assertion without documentary evidence may be appropriate if the Examiner provides specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge. *E.g.*, *Soli*, 317 F.2d at 945-46. However, the rejections do not include such reasoning, as explained below.

For instance, in rejecting claims 102-104, the Final Action states, "once a location of the device is identified or determined, then one skilled in the art would be able to utilize the location information to beam or deliver information, advertisement to the particular device or

user." Final Action at 29. However, such statement tries to paraphrase claimed features and simply assert obviousness without providing any reasoning. Further, the rejection states, "based on the location determination, then one skilled in the art would be able to have a control over it." Id. However, there is no reasoning provided that explains what kind of control is had over the device or how or why such control is possible. Then, the rejection simply asserts that security logic, content delivery logic, and management logic are obvious. Id. Once again, however, there is no technical reasoning. Since the requisite sound technical and scientific reasoning is not provided, such Official Notice is improper.

In the Response to Arguments section of the Final Action, the Examiner states:

> Firstly, the 'closest match' is used and considered to be the identified location. Furthermore, the claims recite that security logic, location-based access security logic, content delivery logic, management logic, or asset tracking logic is the function of the identified closest match, which means that based on the location identified, then the system would deliver a particular content, or prevent or limit to certain accessibility to a particular subscriber, or tracking the device based on the identified location. Since the system has ability to provide a secured network, content delivery, etc.; therefore, it is also obvious that the management logic (i.e., the system) provides management to the wireless communications and wireless communication system resources.

Final Action at 4. However, that is simply a statement that the features of claims 102-104 flow from "identifying a closest match." Once again, however, there is no technical reasoning, as it is merely a long extrapolation. Since the requisite sound technical and scientific reasoning is not provided, such Official Notice is improper.

The Examiner also provides two references to support the assertions (US 7,020,476, hereinafter, *Day*, and United States Patent Application Publication 2003/0104819, hereinafter, *Knauerhase*). It does not appear that the Examiner relies on *Day* to show the features of claim 103, nor does it appear that *Day* discloses the features of claim 103. Rather, the Examiner uses *Knauerhase* to show that the features of claim 103 are well known. The Examiner states that the automatic updating of presence information in *Knauerhase* discloses "providing data content as a function of said closest match," as recited by claim 103. However, *Knauerhase* teaches that the presence information on mobile devices is updated based upon presence rules, not as a function of a closest match. *See Knauerhase* at paragraph [0061]. Thus, the recited features of claim 103 are not disclosed by *Knauerhase*, are not

well-known, and are not properly dismissed as design choices. Accordingly, reversal of the rejection of claim 103 is respectfully requested.

J. Tenth Ground of Rejection

On pages 29-30 of the Final Action, Claims 96-98 and 101 are rejected under 35 U.S.C. §103(a) over *Reed* in view of *Benes*. Appellant traverses the rejection.

Claims 96-98 and 101 depend from claim 91. As shown above, claim 91 is patentable over the rejection of record. Nothing in the rejection of claims 96-98 and 101 cures the deficiency in the rejections of claim 91. Accordingly, it is respectfully submitted that claims 96-98 and 101 are patentable at least because of their dependence from claim 91. Accordingly, reversal of the rejection of claims 96-98 and 101 is respectfully requested.

VIII. CLAIMS APPENDIX

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

IX. EVIDENCE APPENDIX

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the examiner is being submitted.

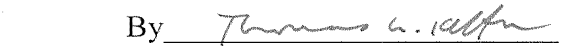
X. RELATED PROCEEDINGS APPENDIX

No related proceedings are referenced in II, above.

Appellant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 06-2380, under Order No. 64032/P008US/10307656 from which the undersigned is authorized to draw.

Dated: December 1, 2006

Respectfully submitted,

By 

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/635,367

1. A system comprising:

a database containing antenna gain differences between multiple antenna patterns of a wireless network access node;

calculation logic for determining receive signal strength differences of a signal, said signal received using said multiple antenna patterns, said signal being transmitted by a device disposed within one or more of said multiple antenna patterns; and

comparison logic for comparing said receive signal strength differences to said antenna gain differences and identifying a closest match.

2. The system of claim 1, wherein said database contains antenna gain differences between multiple narrow antenna patterns and a wide antenna pattern.

3. The system of claim 1, wherein said database contains antenna gain differences associated with each antenna pattern of said wireless network access node.

4. The system of claim 1, wherein said database associates ones of said antenna gain differences in antenna gain difference sets.

5. The system of claim 4, wherein each antenna gain difference set includes angle information.

6. The system of claim 5, wherein said angle information comprises an azimuthal angle of a vector pointing from said wireless network access node to said device.

7. The system of claim 4, wherein antenna gain difference sets include antenna gain differences of a plurality of wireless network access nodes.

8. The system of claim 7, wherein said antenna gain difference sets including antenna gain differences of a plurality of wireless network access nodes include position information.

9. The system of claim 1, wherein said database further contains antenna gain differences between multiple antenna patterns of a second wireless network access node, said calculation logic is further for determining receive signal strength differences of a signal received from said device using said multiple antenna patterns of said second wireless network access node, and said comparison logic is further for comparing said receive signal strength differences of said second wireless network access node to said antenna gain differences and identifying a closest match.

10. The system of claim 9, further comprising:

location estimation logic for determining an estimated location of said device from an intersection point of vectors projected from said wireless network access node and said second wireless network access node.

11. The system of claim 9, further comprising:

location estimation logic for determining an estimated location of said device from position information stored in association with said closest match of said antenna gain differences.

12. The system of claim 1, wherein said calculation logic and said comparison logic are disposed at a centralized system in communication with a plurality of wireless network access nodes.

13. The system of claim 1, wherein said calculation logic and said comparison logic are disposed in a distributed configuration.

14. The system of claim 13, wherein said calculation logic is disposed within said wireless network access node.

15. The system of claim 1, further comprising:

a database containing predicted receive signal strength information for said multiple antenna patterns of said wireless network access node;

measurement logic for measuring receive signal strengths of a signal received from said device using said multiple antenna patterns; and

comparison logic for comparing said measured receive signal strengths to said predicted receive signal strength information and identifying a closest match.

16. The system of claim 15, wherein said database containing predicted receive signal strength information associates predicted receive signal strength information in sets having a distance associated therewith.

17. The system of claim 15, wherein said database containing predicted receive signal strength information associates predicted receive signal strength information in sets having a position associated therewith.

18. The system of claim 15, wherein said predicted receive signal strength information is predicted using a generic propagation model.

19. The system of claim 15, wherein said predicted receive signal strength information includes predicted receive signal strength information of a plurality of wireless network access nodes.

20. The system of claim 15, wherein said database containing predicted receive signal strength information further contains predicted receive signal strength information for multiple antenna patterns of a second wireless network access node, said measurement logic is further for measuring receive signal strengths of a signal received from said device using said multiple antenna patterns of said second wireless network access node, and said comparison logic is further for comparing said measured receive signal strengths of said second wireless network access node to said predicted receive signal strength information of said second wireless network access node and identifying a closest match.

21. The system of claim 20, further comprising:

location estimation logic for determining an estimated location of said device from an intersection point of arcs projected identified distances from said wireless network access node and said second wireless network access node.

22. The system of Claim 20, further comprising:

location estimation logic for determining an estimated location of said device from a midpoint of positions associated with said closest matches from said wireless network access node and said second wireless network access node.

23. The system of claim 20, further comprising:

location estimation logic for determining an estimated location of said device from position information stored in association with said closest match of said predicted receive signal strength information.

24. The system of claim 15, wherein said measurement logic and said comparison logic for comparing said measured receive signal strengths are disposed at a centralized system in communication with a plurality of wireless network access nodes.

25. The system of claim 15, wherein said measurement logic and said comparison logic for comparing said measured receive signal strengths are disposed in a distributed configuration.

26. The system of claim 25, wherein said measurement logic is disposed within said wireless network access node.

27. The system of claim 1, further comprising:

security logic for preventing access to a wireless network by said device as a function of said identified closest match.

28. The system of claim 1, further comprising:

location-based access security logic for providing levels of access to a wireless network by said device as a function of said identified closest match.

29. The system of claim 1, further comprising:

content delivery logic for providing content via a wireless network to said device as a function of said identified closest match.

30. The system of claim 1, further comprising:

management logic for providing management of at least one of wireless communications and wireless communication system resources as a function of said identified closest match.

31. The system of claim 1, further comprising:

asset tracking logic for providing at least one of asset tracking and asset inventorying automatically as a function of said identified closest match.

32. The system of claim 1, wherein said closest match is utilized in identifying a location of said device in a service area of a wireless network.

33. The system of claim 32, wherein said wireless network comprises a wireless local area network.

34. The system of claim 32, wherein said wireless network comprises a wireless metropolitan area network.

35. The system of claim 32, wherein said wireless network comprises a cellular network.

36. The system of claim 32, wherein said wireless network comprises a satellite network.

37. The system of claim 32, wherein said wireless network comprises a point-to-multipoint broadband network.

38. A system comprising:

a database containing predicted receive signal strength information for multiple antenna patterns of a wireless network access node;

measurement logic for measuring receive signal strengths of a signal received using said multiple antenna patterns, said signal being transmitted by a device disposed within one or more of said multiple antenna patterns;

comparison logic for comparing said measured receive signal strengths to said predicted receive signal strength information and identifying a closest match, wherein said database further contains predicted receive signal strength information for multiple antenna patterns of a second wireless network access node, said measurement logic is further for measuring receive signal strengths of a signal received from said device using said multiple antenna patterns of said second wireless network access node, and said comparison logic is further for comparing said measured receive signal strengths of said second wireless network access node to said predicted receive signal strength information of said second wireless network access node and identifying a closest match; and

location estimation logic for determining an estimated location of said device from an intersection point of arcs projected identified distances from said wireless network access node and said second wireless network access node.

39. The system of claim 38, wherein said database associates predicted receive signal strength information in sets of multiple antenna patterns having a distance associated therewith.

40. The system of claim 38, wherein said database associates predicted receive signal strength information in sets having a position associated therewith.

41. The system of claim 38, wherein said predicted receive signal strength information is predicted using a generic propagation model.

42. The system of claim 38, wherein said predicted receive signal strength information includes predicted receive signal strength information of a plurality of wireless network access nodes.

45. The system of claim 38, further comprising:

location estimation logic for determining an estimated location of said device from a midpoint of positions associated with said closest matches from said wireless network access node and said second wireless network access node.

46. The system of claim 38, further comprising:

location estimation logic for determining an estimated location of said device from position information stored in association with said closest match.

47. The system of claim 38, wherein said measurement logic and said comparison logic are disposed at a centralized system in communication with a plurality of wireless network access nodes.

48. The system of claim 38, wherein said measurement logic and said comparison logic are disposed in a distributed configuration.

49. The system of claim 48, wherein said measurement logic is disposed within said wireless network access node.

50. The system of claim 38, further comprising:

a database containing antenna gain differences between said multiple antenna patterns of said wireless network access node;

calculation logic for determining receive signal strength differences of a signal received from said device using said multiple antenna patterns; and

comparison logic for comparing said receive signal strength differences to said antenna gain differences and identifying a closest match.

51. The system of claim 50, wherein said database containing antenna gain differences associates ones of said antenna gain differences in antenna gain difference sets.

52. The system of claim 51, wherein said antenna gain difference sets include angle information.

53. The system of claim 51, wherein said antenna gain difference sets include position information.

54. The system of claim 51, wherein antenna gain difference sets include antenna gain differences of a plurality of wireless network access nodes.

55. The system of claim 54, wherein said antenna gain difference sets include position information.

56. The system of claim 50, wherein said database containing antenna gain differences further contains antenna gain differences between multiple antenna patterns of a second wireless network access node, said calculation logic is further for determining receive signal strength differences of a signal received from said device using said multiple antenna patterns of said second wireless network access node, and said comparison logic for comparing said receive signal strength differences is further for comparing said receive signal strength differences of said second wireless network access node to said antenna gain differences and identifying a closest match.

57. The system of claim 56, further comprising:

location estimation logic for determining an estimated location of said device from an intersection point of vectors projected from said wireless network access node and said second wireless network access node.

58. The system of claim 56, further comprising:

location estimation logic for determining an estimated location of said device from position information stored in association with said closest match of said antenna gain differences.

59. The system of claim 50, wherein said calculation logic and said comparison logic for comparing said receive signal strength differences are disposed at a centralized system in communication with a plurality of wireless network access nodes.

60. The system of claim 50, wherein said calculation logic and said comparison logic for comparing said receive signal strength differences are disposed in a distributed configuration.

61. The system of claim 60, wherein said calculation logic is disposed within said wireless network access node.

62. The system of claim 38, wherein said comparison logic is disposed at a centralized system in communication with a plurality of wireless network access nodes.

63. The system of claim 38, wherein said comparison logic is disposed in a distributed configuration.

64. The system of claim 38, further comprising:

security logic for preventing access to a wireless network by said device as a function of said identified closest match.

65. The system of claim 38, further comprising:

location-based access security logic for providing levels of access to a wireless network by said device as a function of said identified closest match.

66. The system of claim 38, further comprising:

content delivery logic for providing content via a wireless network to said device as a function of said identified closest match.

67. The system of claim 38, further comprising:

management logic for providing management of at least one of wireless communications and wireless communication system resources as a function of said identified closest match.

68. The system of claim 38, further comprising:

asset tracking logic for providing at least one of asset tracking and asset inventorying automatically as a function of said identified closest match.

69. The system of claim 38, wherein said closest match is utilized in identifying a location of said device in a service area of a wireless network.

70. The system of claim 69, wherein said wireless network comprises a wireless local area network.

71. The system of claim 69, wherein said wireless network comprises a wireless metropolitan area network.

72. The system of claim 69, wherein said wireless network comprises a cellular network.

73. The system of claim 69, wherein said wireless network comprises a satellite network.

74. The system of claim 69, wherein said wireless network comprises a point-to-multipoint broadband network.

75. A method for providing information useful in determining a position of a device within a wireless network, said method comprising:

calculating antenna gain differences between multiple antenna patterns of a wireless network access node;

determining receive signal strength differences of a signal, said signal received using said multiple antenna patterns, said signal being transmitted by a device disposed within one or more of said multiple antenna patterns; and

comparing said receive signal strength differences to said antenna gain differences and identifying a closest match.

76. The method of claim 75, further comprising:

identifying a direction associated with said closest match.

77. The method of claim 76, further comprising:

estimating a position of said device as a function of said direction.

78. The method of claim 75, further comprising:

identifying a position stored in association with said closest match.

79. The method of claim 75, further comprising:

predicting receive signal strength information for said multiple antenna patterns of said wireless network access node; and

comparing measured receive signal strengths of a signal received from said device using said multiple antenna patterns to said predicted receive signal strength information and identifying a closest match.

80. The method of claim 79, further comprising:

identifying a direction associated with said closest match of said antenna gain differences; and

identifying a distance associated with said closest match of said receive signal strengths.

81. The method of claim 80, further comprising:

estimating a position of said device as a function of said direction and said distance.

82. The method of claim 79, further comprising:

identifying a direction associated with said closest match of said antenna gain differences; and

identifying a position associated with said closest match of said receive signal strengths.

83. The method of claim 79, further comprising:

estimating a position of said device as a function of said closest match of said antenna gain differences; and

separately estimating a position of said device as a function of said closest match of said receive signal strengths.

84. The method of claim 83, wherein a one of said position estimates is used to confirm the other of said position estimates.

85. The method of claim 79, further comprising:

identifying a position associated with said closest match of said antenna gain differences;

identifying a position associated with said closest match of said receive signal strengths; and

estimating a position of said device as a function of said position associated with said antenna gain differences and said position associated with said receive signal strengths.

86. The method of claim 75, wherein said calculating antenna gain differences comprises:

calculating antenna gain differences between each of a plurality of narrow beam antenna patterns and a wide beam antenna pattern.

87. The method of claim 75, wherein said calculating antenna gain differences comprises:

calculating antenna gain differences for each antenna pattern combination in a set of antenna patterns.

88. The method of claim 75, further comprising:

providing network access as a function of said closest match.

89. The method of claim 75, further comprising:

providing data content as a function of said closest match.

90. The method of claim 75, further comprising:

providing management of network resources as a function of said closest match.

91. A method for providing information useful in determining a position of a device within a wireless network, said method comprising:

predicting receive signal strength information for multiple antenna patterns of a wireless network access node;

comparing measured receive signal strengths to said predicted receive signal strength information and identifying a closest match:

calculating antenna gain differences between said multiple antenna patterns of said wireless network access node;

determining receive signal strength differences of a signal received from said device using said multiple antenna patterns;

comparing said receive signal strength differences to said antenna gain differences and identifying a closest match;

estimating a position of said device as a function of said closest match of said antenna gain differences; and

separately estimating a position of said device as a function of said closest match of said receive signal strengths, wherein a one of said position estimates is used to confirm the other of said position estimates.

92. The method of claim 91, further comprising:

identifying a distance associated with said closest match.

93. The method of claim 92, further comprising:

estimating a position of said device as a function of said distance.

94. The method of claim 91, further comprising:

identifying a position associated with said closest match.

96. The method of claim 91, further comprising:

identifying a direction associated with said closest match of said antenna gain differences; and

identifying a distance associated with said closest match of said receive signal strengths.

97. The method of claim 96, further comprising:

estimating a position of said device as a function of said direction and said distance.

98. The method of claim 91, further comprising:

identifying a direction associated with said closest match of said antenna gain differences; and

identifying a position associated with said closest match of said receive signal strengths.

101. The method of claim 91, further comprising:

identifying a position associated with said closest match of said antenna gain differences;

identifying a position associated with said closest match of said receive signal strengths; and

estimating a position of said device as a function of said position from said antenna gain differences and said position from said receive signal strengths.

102. The method of claim 91, further comprising:

providing network access as a function of said closest match.

103. The method of claim 91, further comprising:

providing data content as a function of said closest match.

104. The method of claim 91, further comprising:

providing management of network resources as a function of said closest match.

105. A system for providing location positioning of a device in a wireless network, said system comprising:

a channel model independent determination algorithm utilizing receive signal strength differences between multiple antenna patterns of a wireless network node to determine information with respect to a position of said device; and

a channel model based determination algorithm utilizing receive signal strengths of said multiple antenna patterns to determine information with respect to a position of said device.

106. The system of claim 105, wherein said channel model independent determination algorithm further utilizes antenna gain differences between said multiple antenna patterns.

107. The system of claim 105, wherein said channel model based determination algorithm further utilizes signal strength predictions provided by modeling an environment of said wireless network.

108. A system for providing location positioning of a device in a wireless network, said system comprising:

a channel model independent determination algorithm utilizing receive signal strength differences between multiple receive antenna patterns of a wireless network node and antenna gain differences between said multiple antenna patterns to determine information with respect to a position of said device.

APPENDIX B

Evidence None

APPENDIX C

Related Proceedings None